

been introduced and no new search is required. In particular, new claim 39 is supported by original Fig. 6, as well as by the specification on page 7, line 19 through page 8, line 4. New claim 39 is also supported by original claims 1, 2, and 24.

The objection and rejection to the application are addressed separately below. No new matter has been added.

Claim Objection

The Examiner states, “Claims 34-38 are objected to because of the following informalities: ‘magnet rotary pointer’ on line 3 should presumably read ‘magnetic rotary pointer’ in order to have clear antecedence. Appropriate correction is required.”

Applicant has amended Claim 34 to provided clearer antecedence.

Rejection under 35 U.S.C. §103

Claims 1-38 stand rejected under 35 U.S.C. 103 as being unpatentable over Lawrence, Jr. (U.S. Patent 4,016,827) in view of Filippone (U.S. Patent 4,924,221). In particular, the Examiner states “Lawrence, Jr. explicitly or inherently teaches, for example in Figures 1 & 2 and in the corresponding portions of his specification, all of the essential features of the claimed dial indicator, including a magnetic rotary pointer, said magnetic rotary pointer being magnetically (not mechanically) coupled to a magnetically adjustable potentiometer which is mounted to a front side of the dial indicator.”

The applicant respectfully traverses this rejection for the reasons set forth below. As described and claimed in the instant application, Applicant’s invention is substantially an aftermarket retrofit for a conventional dial indicator. See for example, claim 1, which recites ‘upgrading a dial indicator to provide both local visible and remote indication of a physical parameter’. The purpose of the retrofit is thus to provide a remote indication capability to a dial indicator previously providing only a local visible indication. The instant invention advantageously provides a relatively simple and inexpensive method for upgrading conventional dial indicators to include remote indication capabilities while at the same time not substantially obstructing local visible indication. The cost

savings provided by the inventive method (as compared to replacing existing dial indicators) are potentially significant for a typical tank farm employing many liquid storage vessels.

Applicant therefore submits that neither Lawrence, Jr., nor Filippone, are sufficiently pertinent to the problem addressed by Applicant, so as to suggest the present invention to one skilled in the art. As described above, the Applicant was faced with the problem of upgrading conventional dial indicators to provide remote indication capability. As such, aspects of the invention include adding a potentiometer to a dial indicator that didn't previously include one. Applicant accomplishes this, as recited in Claim 1, by "magnetically coupling" a "magnetically adjustable potentiometer" to a rotary pointer of the dial indicator. The magnetically coupled pointer thus serves as an input by which the potentiometer is adjusted.

Lawrence, Jr., on the other hand, fails to address this problem. Rather, he simply discloses an apparatus for locally indicating the degree of rotation of a potentiometer shaft (column 1, lines 1-4, 22-27 and column 2, lines 1-10). He does so simply by magnetically coupling a dial indicator to an output (not an input) of a mechanically adjusted potentiometer. As such, Lawrence Jr.'s device is diametrically opposed to that of the instant invention, by providing a mechanically (not magnetically) adjustable potentiometer, and a magnetically (not mechanically) adjustable dial indicator.

Filippone similarly discloses a mechanically adjustable (via mechanical float arm) potentiometer. This device is configured to provide remote (but not local) indication of the level of oil in a tank.

Accordingly, neither Lawrence, Jr. nor Filippone disclose, nor even suggest, magnetically coupling an input device to a potentiometer for the purpose of conveniently providing remote indication of an input parameter. In light of the foregoing, the skilled artisan would not have been motivated by Lawrence, Jr. in view of Filippone, to produce the present invention.

Moreover, even if properly combined, the amalgamation of Lawrence, Jr. and Filippone would not come within the scope of the pending claims. Original independent claim 1, for example, recites "magnetically coupling a potentiometer to said magnetic rotary pointer, the potentiometer being magnetically adjustable..." As stated above, neither Lawrence Jr. nor Filippone disclose potentiometers that are magnetically adjusted, i.e., that are magnetically coupled to an input. Rather,

both disclose potentiometers that are physically coupled to their inputs (i.e., to an input shaft, and a float arm, respectively). Lawrence, Jr. discloses a physically (mechanically) adjustable potentiometer, i.e., a potentiometer that is physically coupled to an input device (shaft), and adjusted (actuated) thereby. (See for example, Figs. 1 and 3, and column 3, lines 16, et seq.: “the blade of a screwdriver is inserted through the bore of bushing 26 and engaged with the screwdriver slot 20 in the end of shaft 13. The shaft may then be turned by the screwdriver to an angular position indicated to the operator by the position assumed by the indicator 52”.) Filippone similarly discloses a rheostat that is mechanically (not magnetically) coupled to an input device. (See Fig. 2, and column 4, lines 1-8, which disclose a float arm mechanically connected to an external rheostat.)

As such, even in combination, Lawrence, Jr. and Filippone fail to disclose a dial indicator having a magnetically adjustable potentiometer as recited in claim 34 or a method for upgrading a dial indicator including magnetically coupling a magnetically adjustable potentiometer with a magnetic rotary pointer as recited in claim 1.

Moreover, original claim 1 further includes “fastening said potentiometer to a front side of the dial indicator.” Neither Lawrence, Jr., nor Filippone, disclose fastening a potentiometer to a front side of a dial indicator. In contradistinction, the potentiometer in the Lawrence, Jr. device is clearly disposed behind the dial indicator with the dial indicator including a bore for screwdriver access as described above. The potentiometer is deployed behind the dial indicator ostensibly to avoid obstructing the user’s view of the indicator. Such a construction, including the use of the bore specifically for the purpose of providing screwdriver access to the potentiometer, teaches away from the arrangement of the instant invention in which the potentiometer is fastened to a front side of the dial indicator. The Filippone device does not include a dial indicator and therefore cannot teach nor suggest fastening a potentiometer to the front side of a dial indicator.

For the foregoing alternative reasons, independent claim 1 is patentable over the art of record, and therefore, the above-cited grounds of rejection should be withdrawn. Applicant also submits that original independent claims 25 to “a kit for upgrading a dial indicator”, original independent claim 34 to a “dial indicator”, and new independent claim 39 to “a method for upgrading a dial indicator” are patentable over the art of record for the same reasons as recited above for original claim 1. New

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claim 39 is believed to be further patentably distinct from the art of record in that it recites, "removing the face plate from the dial indicator, physically coupling at least one magnet to the rotary pointer, and re-fastening the face plate to the dial indicator." Such characteristics are nowhere taught or suggested in the cited prior art.

In addition, the Applicant respectfully submits that dependent claims 2 through 24, 26 through 33, and 35 through 38 are allowable for the same reasons as independent claims 1, 25, and 34 from which they respectively depend, as well as for their own additional characteristics.

CONCLUSION

The Applicant respectfully submits that the stated grounds of rejection have been properly traversed or rendered moot. This application is now believed to be in condition for allowance, and such action at an early date is respectfully requested. However, if the Examiner believes there are any remaining issues, Applicant's undersigned representative respectfully requests a telephone call to discuss the case.

Respectfully submitted,



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